

LISTING OF CLAIMS:

Claim 1 (Original) Surface-modified, pyrogenically produced oxides doped by aerosol.

Claim 2 (Previously presented) Surface-modified, pyrogenically produced oxides doped by aerosol, characterized in that the oxides are selected from the group consisting of SiO_2 , Al_2O_3 , TiO_2 , B_2O_3 , ZrO_2 , In_2O_3 , ZnO , Fe_2O_3 , Nb_2O_5 , V_2O_5 , WO_3 , SnO_2 and GeO_2 .

Claim 3 (Currently amended) The surface-modified, pyrogenically produced oxides according to claim 1 or 2, wherein the surface-is modified with one or several compounds selected from the following groups:

a) Organosilanes mixture having the formulas of the type $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$,

$\text{R} = \text{alkyl}$,

$n = 1 - 20$;

b) Organosilanes mixture having the formulas of the type $\text{R}'_x (\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$

$\text{R} = \text{alkyl}$,

$\text{R}' = \text{alkyl}$,

$\text{R}' = \text{cycloalkyl}$

$nN = 1 - 20$,

$x+y = 3$,

$x = 1$, or 2,

$y = 1$, or 2;

c) Halogen organosilanes having the formulas of the type $X_3 Si(C_nH_{2n+1})$ and $X_3 Si(C_nH_{2n-1})$

$X = Cl$, or Br ,

$n = 1 - 20$;

d) Halogen organosilanes having the formulas of the type $X_2 (R') Si(C_nH_{2n+1})$ and

$X_2 (R') Si(C_nH_{2n-1})$,

$X = Cl$, or Br

$R' = alkyl$

$R' = cycloalkyl$

$n = 1 - 20$;

e) Halogen organosilanes having the formulas of the type $X (R')_2 Si(C_nH_{2n+1})$ and

$X (R')_2 Si(C_nH_{2n-1})$,

$X = Cl$, or Br ;

$R' = alkyl$

$R' = cycloalkyl$

$n = 1 - 20$;

f) Organosilanes having the formula of the type $(RO)_3Si(CH_2)_mR'$

R = alkyl, alkyl

$m = 0, 1, 2, 0, \text{ or } 1-20,$

R' = methyl-, aryl- (e.g., $-C_6H_5$, substituted phenyl groups,)

$-C_4F_9, OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2,$

$-NH_2, =N_3, -SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2,$

$-N-(CH_2-CH_2-CH_2NH_2)_2,$

$-OOC(CH_3)C=CH_2,$

$-OCH_2-CH(O)CH_2,$

$-NH-CO-N-CO-(CH_2)_5,$

$-NH-COO-CH_3, -NH-COO-CH_2-CH_3, -NH-(CH_2)_3Si(OR)^3,$

$-S_x-(CH_2)_3Si(OR)^3,$

$-SH, \text{ and or}$

$-NR'R''R''',$ wherein R' = alkyl, or aryl; $R'' = H, \text{ alkyl, or aryl; and } R''' = H, \text{ alkyl, aryl, benzyl, or } C_2H_4NR'''' R''''' \text{ with } R''''' = H, \text{ or alkyl and } R'''' = H, \text{ or alkyl;}$

g) Organosilanes having the formula of the type $(R'')_x(RO)_ySi(CH_2)_mR'$

$R'' = \text{alkyl, or cycloalkyl,}$

$x+y = 2,$

$x = 1, \text{ or } 2,$

y = 1, or 2,

m = 0.1 to 20-0, or 1 to 20,

R' = methyl-, aryl, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

-N-(CH₂-CH₂-NH₂)₂,

-OOC(CH₃)C=CH₂,

-OCH₂-CH(O)CH₂,

-NH-CO-N-CO-(CH₂)₅,

-NH-COO-CH₃, -NH-COO-CH₂-CH₃, -NH-(CH₂)₃Si(OR)₃,

-S_x-(CH₂)₃Si(OR)₃,

-SH, and or

-NR'R''R''', wherein R' = alkyl, or aryl; R'' = H,

alkyl, or aryl; and R''' = H, alkyl, aryl, benzyl, or

C₂H₄NR'''' R''''' with R'''' = H, or alkyl and

R''''' = H, alkyl} ;

h) Halogen organosilanes having the formula of the type X₃Si(CH₂)_m-R'

X = Cl, or Br,

m = 0, 1 - 20,

R' = methyl-, aryl., -C₆H₅, substituted phenyl groups

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,
-N-(CH₂-CH₂-NH₂)₂,
-OOC (CH₃)C = CH₂,
-OCH₂-CH(O) CH₂,
-NH-CO-N-CO-(CH₂)₅,
-NH-COO-CH₃, -NH-COO-CH₂-CH₃, -NH-(CH₂)₃Si(OR)₃,
-S_x-(CH₂)₃Si(OR)₃, and or
-SH;

i) Halogen organosilanes having the formula of the type (R)X₂Si(CH₂)_m-R'

X = Cl, or Br,

R = alkyl such as methyl, - ethyl-, or propyl-,

m = 0, or 1 – 20,

R' = methyl-, aryl-, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

-N-(CH₂-CH₂-NH₂)₂,

-OOC (CH₃)C = CH₂,

-OCH₂-CH(O) CH₂,

-NH-CO-N-CO-(CH₂)₅,

-NH-COO-CH₃, -NH-COO-CH₂-CH₃,

-NH-(CH₂)₃Si(OR)₃,

-S_x-(CH₂)₃Si(OR)₃ , or

-SH;

(j) Halogen organosilanes having the formula of the type (R)₂X Si(CH₂)_m-R'

X = Cl, or Br,

R = alkyl,

m = 0, or 1 – 20,

R' = methyl-, aryl-, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

-N-(CH₂-CH₂-NH₂)₂,

-OOC (CH₃)C = CH₂,

-OCH₂-CH(O) CH₂,

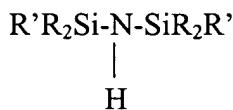
-NH-CO-N-CO-(CH₂)₅,

-NH-COO-CH₃, -NH-COO-CH₂-CH₃, -NH-(CH₂)₃Si(OR)₃,

-S_x-(CH₂)₃Si(OR)₃ or

-SH;

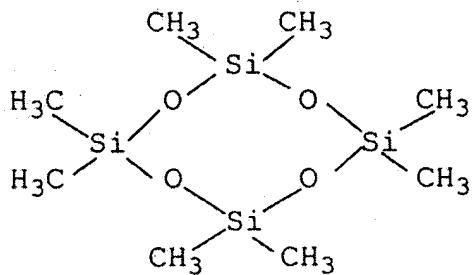
(k) Silazanes having the formula of the type



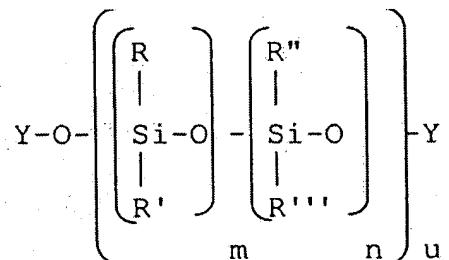
R = alkyl,

R' = alkyl, or vinyl; or

(l) Cyclic polysiloxanes of the type D 3, D 4 or D 5, where D4 has the formula:



m) Polysiloxanes or silicone oils having the formula of the type



$m = 0, 1, 2, 3, \dots \infty$

$n = 0, 1, 2, 3, \dots \infty$

$u = 0, 1, 2, 3, \dots \infty$

$Y = \text{CH}_3, \text{H}, \text{C}_n\text{H}_{2n+1} \quad n=1-20$

$Y = \text{Si}(\text{CH}_3)_3, \text{Si}(\text{CH}_3)_2\text{H}$

$\text{Si}(\text{CH}_3)_2\text{OH}, \text{Si}(\text{CH}_3)_2(\text{OCH}_3),$

$\text{Si}(\text{CH}_3)_2(\text{C}_n\text{H}_{2n+1}) \quad n=1-20,$

wherein,

R = alkyl, aryl, $(CH_2)_n-NH_2$, or H,

R' = alkyl, aryl, $(CH_2)_n-NH_2$, or H,

R'' = alkyl, aryl, $(CH_2)_n-NH_2$, or H,

R''' = alkyl, aryl, $(CH_2)_n-NH_2$, or H,

Claim 4 (Previously presented) A method of producing the surface-modified oxides in accordance with claim 1 or 2, comprising placing pyrogenically produced oxides doped by aerosol in a suitable mixing container, spraying the oxides under intensive mixing with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 5 (Previously presented) In a reinforcing filler composition wherein the improvement comprises the surface-modified oxides according to claim 1 or 2 as reinforcing filler.

Claim 6 (Original) The method of claim 4 wherein the spraying step includes spraying with water and/or acid prior to the spraying with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 7 (Original) The method of claim 4 further comprising re-mixing at 15 to 30 minutes and tempering at a temperature of 100 to 400 °C for a period of 1 to 6 hours.

Claim 8 (Original) The surface-modified, pyrogenically produced oxides according to claim 3 wherein the cyclic polysiloxanes is type D 4.